EAST AFRICAN COMMUNITY

EDICT OF GOVERNMENT

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EAS 60 (2006) (English): Peanut butter – Specification



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EAST AFRICAN STANDARD

Peanut butter –Specification

EAST AFRICAN COMMUNITY

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Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in the East African Community. It is envisaged that through harmonized standardization, trade barriers that are encountered when goods and services are exchanged within the Community will be removed.

In order to achieve this objective, the Community established an East African Standards Committee mandated to develop and issue East African Standards.

The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the procedures of the Community.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

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Peanut butter – Specification

1 Scope

This East African Standard prescribes the requirements and methods of test for peanut butter.

2 Definitions

For the purposes of this standard, the following definition shall apply:

peanut butter
a cohesive, comminuted food product prepared from clean, sound shelled peanuts (groundnuts) by grinding roasted mature kernels from which the seed coats have been removed, and to which not more than 10 % of other optional ingredients have been added

3 Types

3.1 Stabilized

This shall be peanut butter to which any suitable ingredient(s) has been added to reduce oil-meal separation.

3.2 Non-stabilized

This shall be peanut butter to which no ingredient(s) has been added to reduce oil-meal separation.

4 Ingredients

4.1 Essential ingredients

Peanut butter shall be prepared from the ingredients in Table 1.

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Table 1 — Essential ingredients in peanut butter

Ingredient	Percent by mass	Method of test
Peanuts (groundnuts), min.	90	Annex A
Salt as NaCl, max.	2	

4.2 Optional ingredients

In addition to the essential ingredients specified in Table 1, the following ingredients may be added at in accordance with EAS 103, *Schedule for permitted food additives:*

a) Sweeteners

- Dextrose
- Powdered sugars
- Glycerine
- Honey

b) Stabilizers and emulsifiers

- Lecithin
- Glycerol monostearate (dehydrated)
- Vegetable oil — max, 3.0 %

c) Antioxidants

- Butylated hydroxy anisole — max. 0.01 % of the fat present
- Butylated hydroxy toluene — max. 0.02 % of the fat present
- Calcium disodium EDTA (calcium disodium ethylene-diamine tetra-acetate) — 0.01 % of the fat present
- Ascorbic acid.

5 Quality requirements

5.1 General

5.1.1 Peanut butter shall:

a) be free from skins and shells;

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b) be free from any foreign matter;

c) have a yellow brown colour;

d) have an aroma and flavour typical of fresh roasted peanut; and

e) have a good spreadability (shall spread easily, shall not be thin nor slightly stiff).

5.1.2 Only slight mixing shall be required to re-disperse any separated fat in the non-stabilized type.

5.1.3 There shall be no noticeable oil separation in the stabilised type.

5.2 Composition

Peanut butter shall conform to the compositional requirements in Table 2.

Table 2 — Compositional requirements for peanut butter

Characteristic	Requirement	Method of test
Moisture content, %, max.	2.0	Annex B
Fat (on dry weight basis)	48 - 55	Annex C
Acid value	4.0	Annex D
Total ash (on dry weight basis)	5.0	Annex E
Aflatoxin content	10	EAS 74

5.3 Hygiene

5.3.1 Peanut butter shall be manufactured and handled according to the provisions of EAS 39, *Hygiene in the food and drink manufacturing industry — Code of practice.*

5.3.2 Peanut butter shall be free of pathogenic organisms and shall conform to the microbiological requirements in Table 3.

Table 3 — Microbiological requirements for peanut butter

Characteristic	Requirement	Method of test
Moulds, max.	10^3/g	EAS 217
E. Coli	0/g	

6 Packaging and Labelling

6.1 Packaging

Peanut butter shall be packaged in food grade containers such as glass or plastic jars, or arc-welded tins or aluminium packaging .The packages shall be properly sealed.

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6.2 Labelling

The packages shall be labelled according to EAS 38 *Labelling of pre-packaged foods — Specification*, and in addition the following shall be indicated:

a) 'Peanut butter' (if no stabilizer has been added);

b) 'Peanut butter stabilized' (if stabilizer/emulsifier has been added);

c) 'Batch /code number';

d) 'Best before' date;

e) 'Human food'; ans

f) 'Store in a cool dry place'.

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Annex A
(normative)

Determination of salt (AOAC official method)

A.1 Reagents

A.1.1 Acetone

A.1.2 10 % calcium acetate solution

A.1.3 HNO_3

A.1.4 0.1N $AgNO_3$

A.1.5 Ferric indicator

A.1.6 0.1N NH_4SCN_3

A.2 Procedure

A.2.1 Weigh 2 g of a thoroughly mixed sample into a platinum or silica dish.

A.2.2 Disperse the sample with 10 mL of acetone.

A.2.3 Remove acetone, at room temperature, with an air current.

A.2.4 Add, and thoroughly mix, 10 mL of 10 % calcium acetate solution.

A.2.5 Carefully dry on a steam bath.

A.2.6 Ash in a muffle oven at 500 °C (1 022°F). Complete ashing not necessary.

A.2.7 Place the ash in a beaker and dissolve the ash in 25 mL HNO_3 (1+3).

A.2.8 Add at least 2 mL - 4 mL of 0.1N $AgNO_3$ that is just enough to precipitate all chloride present.

A.2.9 Add at least 5 mL of 0.1N $AgNO_3$ in excess, to A.2.8.

A.2.10 Heat to boil, cool, then add 5 mL ferric indicator.

A.2.11 Titrate excess Ag with 0.1N NH_4SCN (which has been standardized to equalize normalities) to a permanent light brown end point.

A.2.12 Subtract the amount of NH_4SCN used (in A.2.11) from the total $AgN0_3$ used (in A.2.8 and A.2.9). The resulting difference is the mL of 0.1N $AgNO_3$ used in the calculation of salt (A.2.13).

A.2.13 Calculate as:

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$$\text{Percent NaCl} = \frac{(ml\ \ of\ \ 0.1\ \ N\ \ AgNO_3)\ (0.058\ \ \ 45)\ \ (100)}{(grams\ \ \ \ of\ \ sample)}$$

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Annex B
(normative)

Determination of moisture

B.1 Apparatus

B.1.1 Oven, 95 °C — I00 °C, 100 mm Hg (13.3 kPa)

B.1.2 Analytical balance

B.1.3 Dishes with lid, aluminium, nickel or thin stainless steel of diameter 60 mm

B.1.4 Glass rod

B.1.5 Sand — Washed with 5 % hydrochloric acid solution and rinsed free from hydrochloric acid; sieved so that the grains are sizes within the range 100 mm to 400 mm and calcinated.

B.1.6 Desiccator

B.2 Procedure

B.2.1 Preparation of apparatus

Dry in the oven at 95 °C — 100 °C under a pressure of 100 mm Hg (13.3 kPa) a metal dish and its lid in which has been put 10 g – 20 g of prepared sand and a glass rod. Dry for an hour, weigh the dish to the nearest 0.000 2 g after cooling in a desiccator.

B.2.2 Preparation of the sample

Transfer to the pre-dried dish about 2 g to 5 g of the homogenized (blended) sample and weigh. Mix it intimately with the sand by means of the rod taking care to avoid any loss of product or sand to the dish. Dry the prepared sample in the oven for 5 hours at 95 °C – 100 °C.

B.3 Calculation

$$\text{Moisture percentage by mass} = \frac{(M_1 - M_2)\,x\,100}{M_1 - M_0}$$

where,

M_0 is the mass in g of the dish and accessories (sand, rod and lid),

M_1 is the mass in g of the dish (and its accessories) and sample before drying, and

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M_2 is the mass in g of the dish (and its accessories) and sample after drying.

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Annex C
(normative)

Determination of fat

C.1 Reagents

C.1.1 Petroleum ether, of boiling range 40 °C to 60 °C.

C.1.2 Hexane, analytical grade.

C.2 Procedure

Weigh accurately about 2.5 g of the sample, dried as in B.1.1, and extract with petroleum ether or hexane, analytical grade, in a Soxhlet or other suitable extractor. The extraction period may vary from 4 h at a condensation rate of 5 - 6 drops per second. Dry the extract on a steam bath for 30 min, cool in a desiccator and weigh. Continue at 30 min intervals this alternative drying and weighing until the difference between two successive weighings is less than one milligram.

Note the lowest mass.

C.3 Calculation and expression of results

Crude fat (on moisture-free basis), % by mass = $100\,\frac{(M_1 - M_2)}{M}$

where,

M_1 is the mass in g of the extraction flask with dried extract,

M_2 is the mass in g of the extraction flask, and

M is the mass in g of the dried sample taken for the test.

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Annex D
(normative)

Determination of acid value of extracted fat

D.1 Apparatus

Soxhlet fat extraction apparatus

D.2 Reagents

D.2.1 Petroleum ether, distilling below 65 °C, or ethyl ether

D.2.2 Alcohol potassium hydroxide, 0.1N (use absolute or alcohol denatured with methanol (MeOH))

D.2.3 Alcohol ether solution, *e*qual volumes of 96 % alcohol and ethyl ether

D.2.4 Phenolphthalein solution, 1 % in alcohol or alcohol denatured with MeOH. Add 0.3 mL per 100 mL mixture of alcohol-ether and add alcoholic KOH solution to a faint pink colour.

D.3 Procedure

D.3.1 Extract 10.00 g ± 0.01 g of the sample taken in a thimble with petroleum ether for about 16 h in a Soxhlet extraction apparatus. Completely evaporate the solvent from the extraction flask (weighed previously) on a steam bath, for 30 min, cool in a desiccator and weigh. Continue at 30 min intervals this alternative drying and weighing until the difference between two successive weighings is less than one milligram. Dissolve the residue in the extraction flask with 50 mL of the alcohol-ether phenolphthalein solution. Titrate the dissolved extract, with standard potassium hydroxide solution, to a faint pink colour, which persists for 10 s. If emulsion is formed during titration, dispel by adding a second 50 mL portion of the alcohol-ether phenolphthalein solution.

D.3.2 Make a blank titration on 50 mL of the alcohol-ether phenolphthalein solution and subtract this value from the titration value of the sample. If the additional 50 mL portion of the alcohol-ether phenolphthalein solution is added, double the blank titration.

D.4 Calculation

Calculate the acid value from the following formula:

$$\text{Acid value (as oleic acid)} = \frac{56.1VN}{M}$$

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where

V is the volume in ml of standard potassium hydroxide solution used,

N is the normality of standard potassium hydroxide solution, and

M is the mass in g of fat extract taken for the test.

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Annex E
(normative)

Determination of total ash

E.1 Procedure

Ignite the dried material in the dish (see B.2.1) with flame of a suitable burner for about one hour. Complete the ignition by keeping in a muffle furnace at 550 °C to 600 °C until grey ash results, cooling and weighing at half-hour intervals until the difference in mass between two successive weighings is less than one milligram. Note the lowest mass.

E.2 Calculation

Calculate total ash as follows:

$$\text{Total ash (on dry basis), \% by mass} = \frac{100(M_2 - M_0)}{M_1 - M_0}$$

where,

M_0 is the mass in g of the dish with its accessories,

M_1 is the mass in g of the dish, its accessories and the dried material after drying as in (B.2.1), and

M_2 is the mass in g of the dish, its accessories and ash after ignition (*see* B.2.2).

- EAS 74, Animal foodstuffs – Methods of test

- EAS 217, Methods for the microbiological examination of foods

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